# Los Alamos Large Scale Demonstration and Deployment Project Midyear Review

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# Presentation Outline

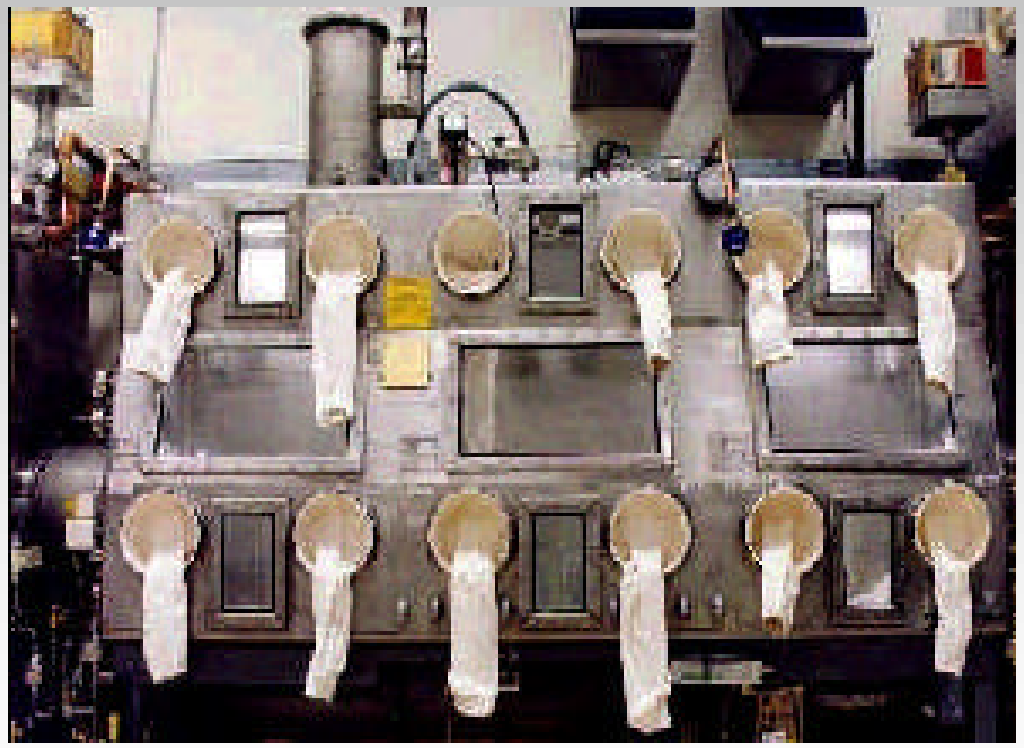
- Project background and objectives
- Correlation to site technical needs
- Demonstration status
- Individual demonstration description
- Project cost/schedule status
- Future plans
- Miscellaneous topics

# The Los Alamos LSDDP was established to address DOE's large metallic TRU waste problem

- 28,000 $m^3$ of TRU boxed waste in DOE
- 2400 $m^3$ at LANL in Storage
- 3000 $m^3$ from future D&D at LANL
- 8200 $m^3$ at RFETS
- 150 oversized crates at INEEL AMWTP
- 58 steel boxes at NTS
- 30 oversized crates at LLNL

**Criteria;**
**1. Goals and Approach**
**2. Relevancy**

# Three Station LANL Glovebox



Criteria;
2. Relevancy

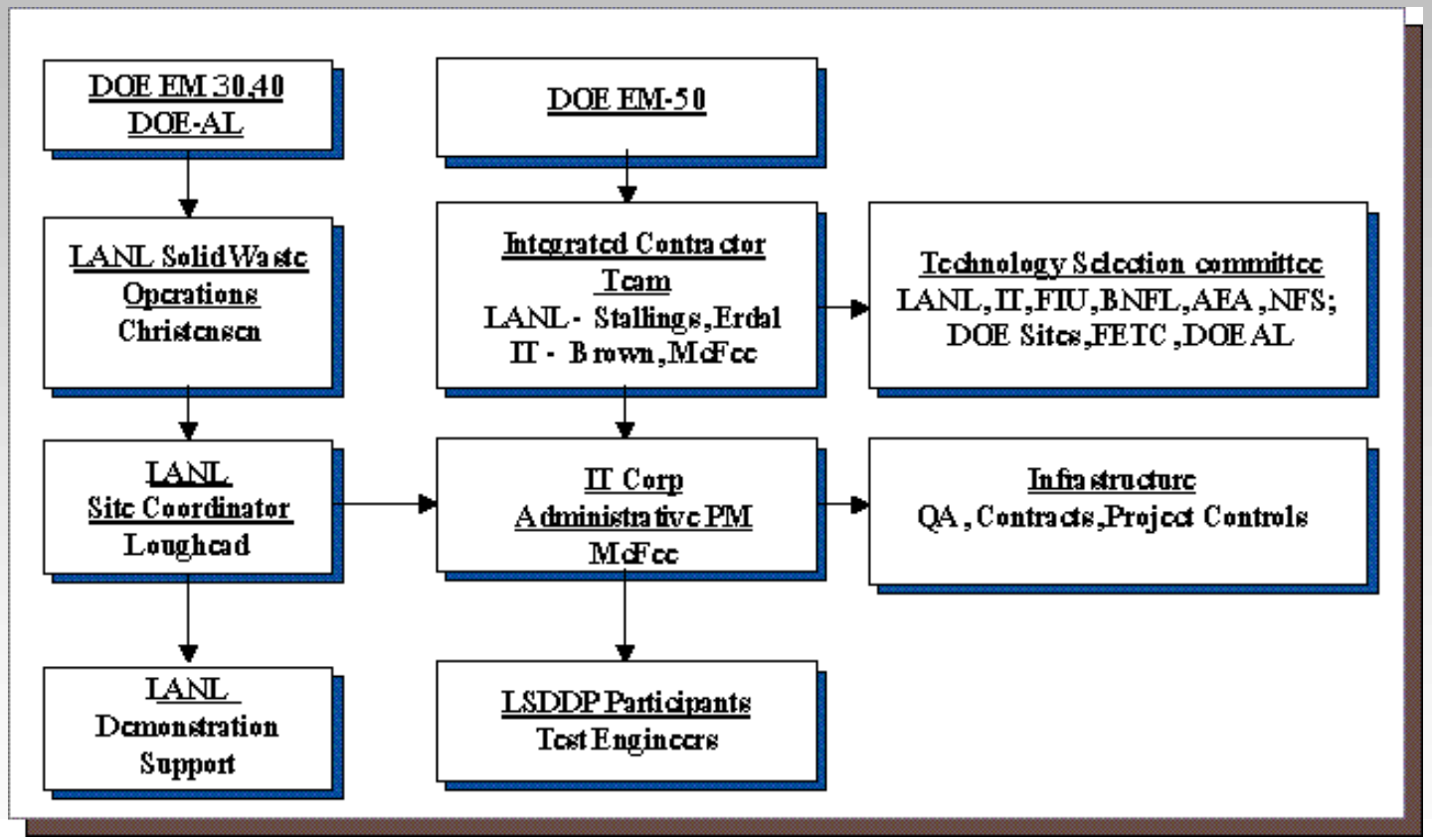
# Crated LANL Large Metal Objects

**Criteria;**
**2. Relevancy**

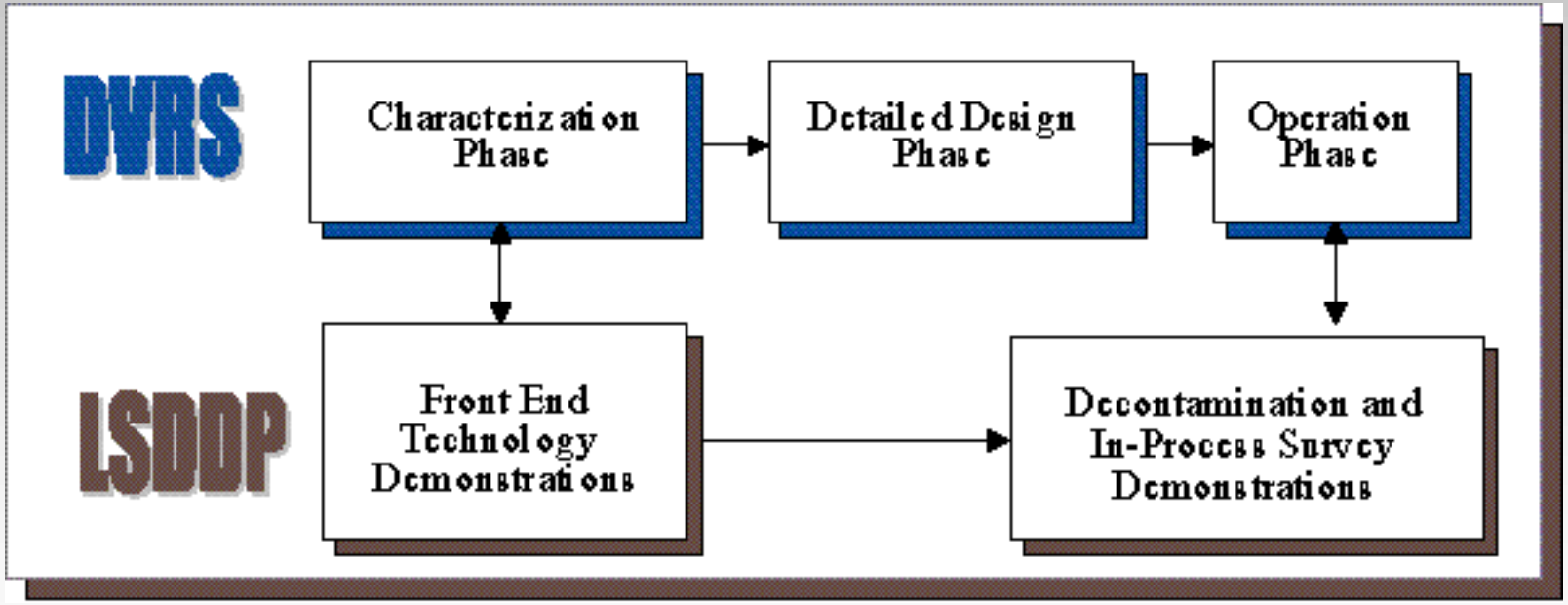
# The Los Alamos ICT objectives:

- Demonstrate improved cost/risk technologies
- Demonstrate technologies amenable to deployment
- Demonstrate side-by-side with baseline
- Synergism from industry, academia, and government
- Demonstrate leveraged funding pool

# Los Alamos LSDDP organization chart



# The LSDDP approach supports the LANL DVRS operation and deployment

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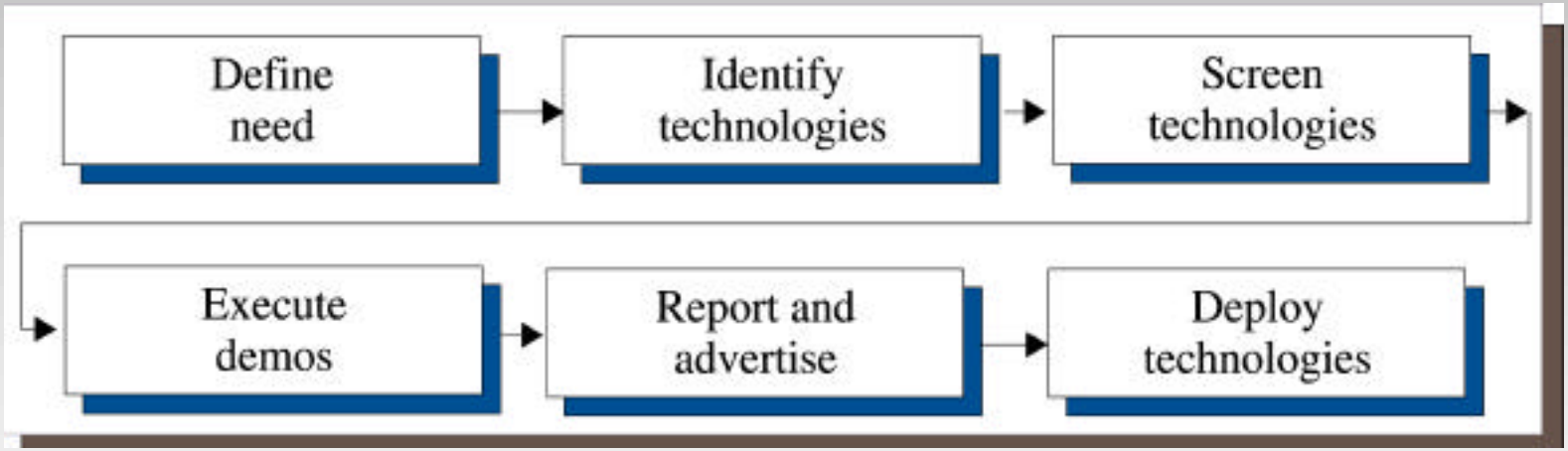
**3. Progress**

# The LSDDP technical approach to deployment is:



# The Los Alamos baseline process separates TRU from LLW

- Assay of crates
- Manual opening of crates
- Manual removal of packing & equipment
- Removal of legs and apurtenances
- Removal of shielding
- Gross decontamination
- HP water decontamination
- Shear/Baler volume reduction
- Packaging and manifesting

# The Los Alamos Solid Waste Operations has defined technical needs;

1. Remove Foam Packing
2. Remove Shielding
3. Remove legs
4. Remove gloves and windows
5. Improved PPE
6. Hot Spot Char'n
7. Open Crates
8. Decon Liquids
9. Remove Items in Gloveboxes
10. Remove Packing
11. Tomography for Crates
12. Remove Paint

# Numerous candidate technologies were identified in the search

- CBD announcement resulted in 24 Expressions of Interest
- Focussed Search identified additional 15 candidate technologies
- Project remains open to applicable cost and risk reduction technologies

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# Expressions of Interest addressed several published DOE-AL needs

- 6 Characterization EOIs AL-07-01-14-MW, OK99-06 AL-07-09-01-11-MW, OH-WV-90, NV07-9902-05,
- 10 Decontamination EOIs AL-09-01-12-MW,AL-09-01-04-DD-S RLDD063, ORDD-02a, ID-7.2.04
- 1 Material Tracking EOI AL-09-01-12-MW
- 2 Metal Cutting Tool EOIs AL-09-01-12-MW, RL-DD02, RF-DD11
- 3 Robotic EOIs AL-09-01-12-MW, ID-7.2.08
- 2 System EOIs AL-09-01-12-MW

# The FY-99 scheduled demonstrations include:

- AeroGo air pallets
- SAIC VACIS for RTR of crates
- MCS transportable X-Ray for RTR of crates
- NUKEM RASP for sectioning gloveboxes
- Mega-Tech hydraulic cutter

**Criteria;**
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# Technology Demonstration: AeroGo air lift pallets

- Technology is to expedite movement and accurate positioning of crates in DVRS slab counter
- The baseline technology is “heavy hauler” wheeled carts
- Technology is well developed in commercial industry
- Test Plan is complete
- Demonstration scheduled for June 7, 1999

**Criteria;**
**2. Relevancy**
**3. Progress**

# DVRS Slab Counter for Application of AeroGo Pallets


**Criteria;**
**2. Relevancy**
**3. Progress**

# AeroGo Load Modules

**Criteria;**
**2. Relevancy**
**3. Progress**

# AeroGo Pallets Moving Machine

**Criteria;**
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# The AeroGo demonstration scope includes;

- Vendor will provide equipment and technical support at no cost
- Demonstration scheduled for 3-4 days as crate survey is slow
- Demonstration supports survey of approximately 6 crates which are selected to represent the population of LANL crates
- Crates will be moved through a defined path to establish comparison to baseline
- Equipment operated by LANL technical staff providing qualitative input to evaluation

**Criteria;**
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# Technology Demonstration: VACIS Mobile RTR System

- Technology is to RTR crates to identify mixed waste and to improve safety in crate opening and processing; improvement over baseline
- Technology is a risk reduction for DVRS operation as RTR was not in baseline
- Technology is deployed by Treasury Dept for locating contraband in trucks
- Demonstration unit is prototype for transportable system under test by DoD
- Demonstration scheduled for June 21, 1999

**Criteria;**
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# The VACIS demonstration scope includes:

- The system will be brought on-site by DoD Thunder Mountain Evaluation Center at cost of travel for staff
- TMEC staff will operate VACIS, LANL will stage crates
- Two weeks on-site for characterization will allow characterization of up to 40 crates
- The crates will be selected to represent the LANL population

**Criteria;**
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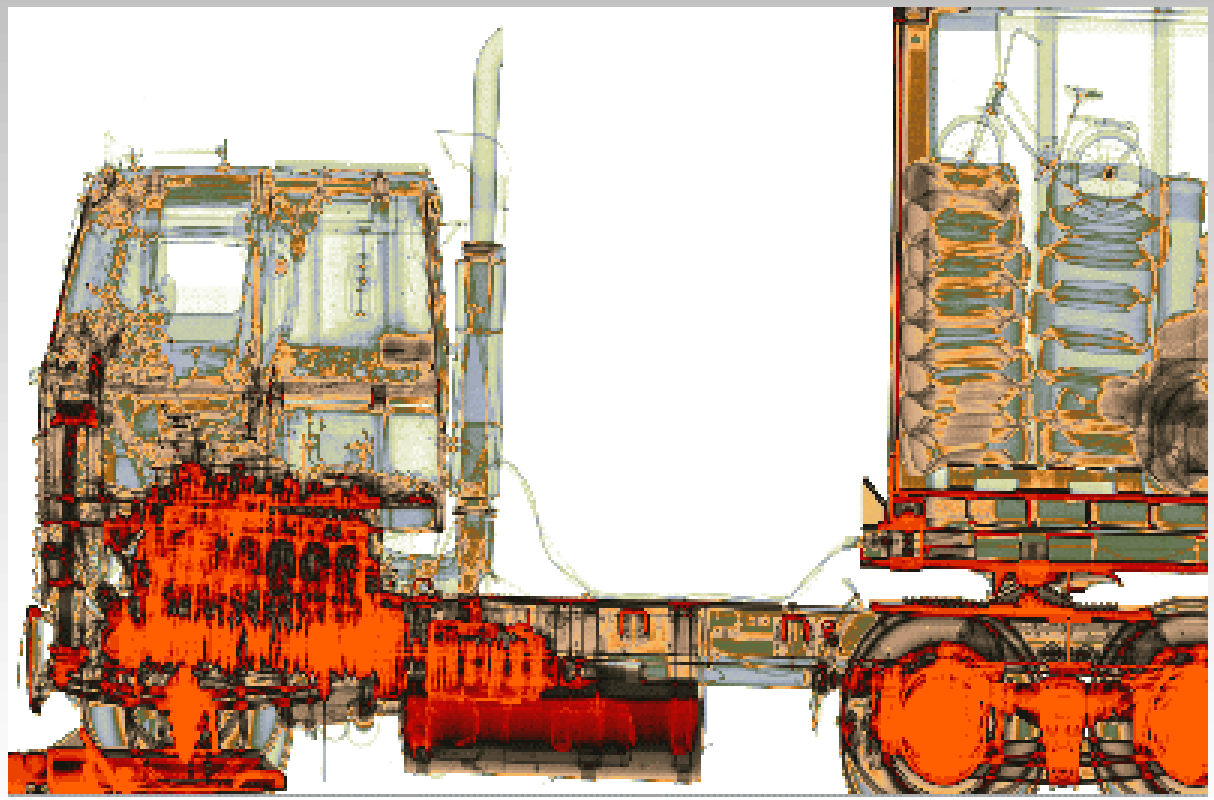
# X-Ray of Truck and Cargo



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# VACIS system for RTR of trucks

Criteria;
2. Relevancy
3. Progress

# VACIS system for RTR of trucks

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# Technology Demonstration: MCS X-Ray of crates

- Technology is to RTR crates to identify mixed waste and to improve safety in crate opening and processing; improvement over baseline
- Technology is a risk reduction for DVRS operation as RTR was not in baseline
- Prototype based on systems for WIPP waste certification
- Technology deployed at many sites for RTR of TRU drums
- Demonstration scheduled for July 19, 1999

**Criteria;**
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**3. Progress**

# The MCS scope for RTR of crates will include:

- The system will be brought on-site by MCS
- MCS staff will operate the system, LANL will stage crates
- The time period on-site will be determined to include RTR of at least 10 representative crates
- The crates will be selected to represent the LANL population of size and contents within size limits of MCS

# Technology Demonstration; MegaTech hydraulic cutter

- Hydraulic cutter is to demonstrate improvement in time and risk in removing glovebox legs and apurtenances.
- Baseline is reciprocating saw
- Demonstration will be in a simulated radioactive environment using LANL labor to dismantle many gloveboxes and improve data quality.
- Demonstration will be off-site to reduce cost.

**Criteria;**
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# The MegaTech scope includes:

- The demonstration system will be supplied by MegaTech
- Actual operation will be by LANL operations staff in full anti-Cs to represent radioactive operations
- A fixture will be constructed to facilitate cutting of multiple sets of glovebox legs for both the innovative and baseline technology
- The operator's qualitative observations will be an integral part of the evaluation process

**Criteria;**
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# Technology Demonstration: NUKEM RASP

- RASP can section gloveboxes remotely
- NUKEM funded by Morgantown PON
- Demonstration at RFETS under review
- Demonstration period will be selected to reflect the slow operation of the RASP  Costing will be based on multiple RASP units controlled by a single operator

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# The LSDDP communication has been focussed on technology search activities:

- Website maintained for information for potential vendors and demonstrators
- Attendance/Booth at Spectrum 98
- Attendance/Booth/Technical Paper at Waste Management 99

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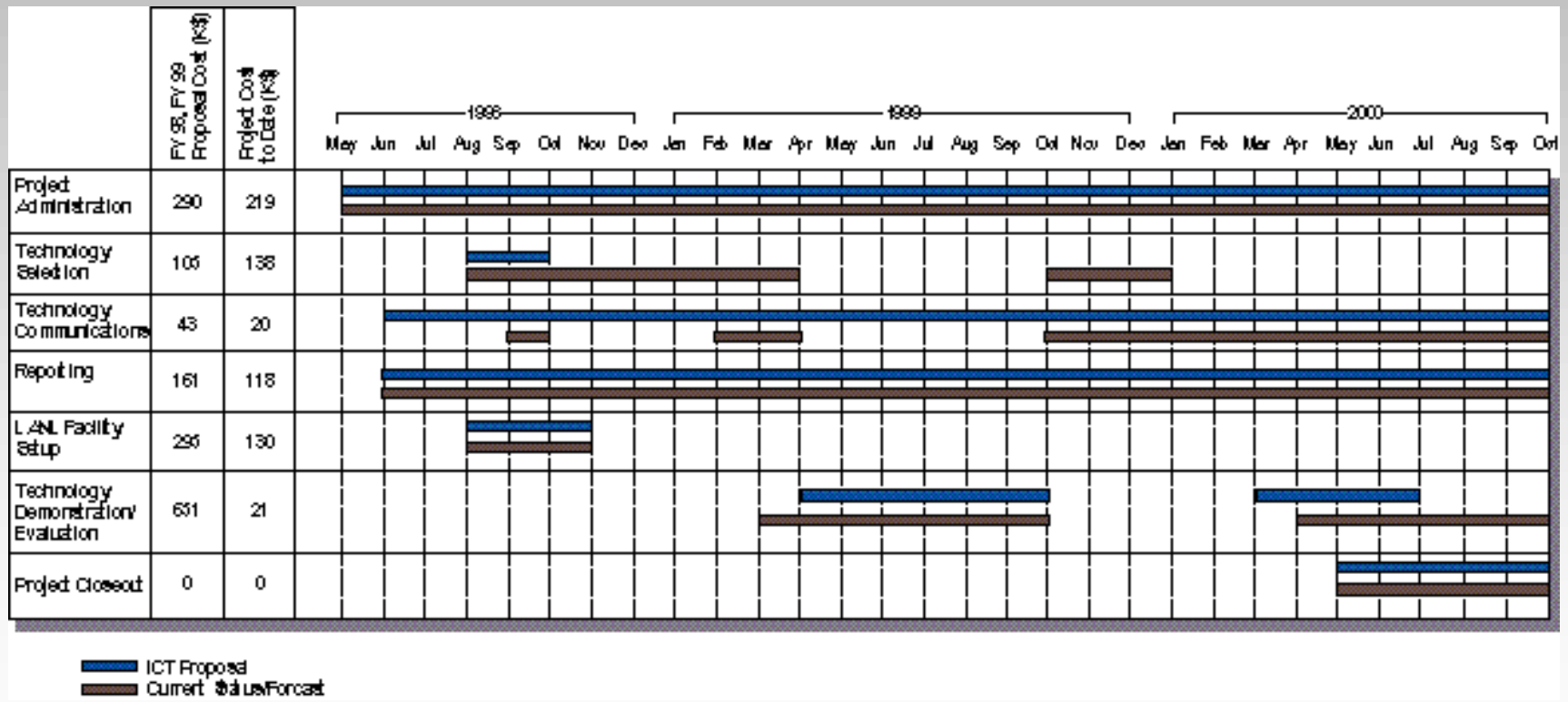
# Project Schedule/Budget Status

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# Future Plans

- Complete up-front technology demonstrations in FY-99
- Support NUKEM demonstration off-site
- Support Mega Tech demonstration off-site
- Evaluate Russian Ministries Technologies as information is provided
- Decontamination/Process Characterization demonstrations are scheduled for summer 2000

# Other Comments:

- LSDDP staff is communicating with NTS, RFETS, INEEL, AMWTP, and LLNL to ensure multiple site needs.
- DOE-AL committed in the project kickoff meeting to deploy technologies as the DVRS has an extended future
- LSDDP site coordinator also supports DVRS

# Other Comments - continued

- LANL D&D manager is also tracking progress on specific technologies
- LSDDP is being reconfigured to reflect revised funding vehicle.
- Stakeholder concerns - not at this time